NEGOTIATED RULEMAKING
REGARDING
DOMESTIC WELL SEALING

July 11, 2006
In response to the Negotiated Rulemaking Process
Idaho Department of Water Resources

Teleconference held on July 10, 06 7:30 PM with licensed well drillers around the state.
Attendees: Roger Buchanan
Alan Lloyd
Ray Nelson
Gary Duspiva
Ken Smith
Brett McCarty
Roger Batt IGWA Exec. Dir

The meeting was opened with an overview and update of current activities. Participants were open minded and were pleased to be a part of this rulemaking function. All were positive about new rules and the discussion was very helpful in creating this outline.

Overview of observations and common opinions:

- One size cannot fit all. One problem cannot be fixed by making statewide regulations. Diverse geologic conditions require unique construction methods.
- Implementation of a designation called an "Area of Geologic Condition" is appealing to all and allows for specific construction methods to be outlined in a rule.
- Enforcement is absolutely necessary. If any new rules are to be accepted and supported by the drilling community, they must be created with an equal balance of responsibility between the drilling community and IDWR, ensuring that safe and practical methods are protecting the resource and the homeowner. New rules are viewed as useless without oversight. An outline of new statewide oversight policies must be presented by IDWR during these proceedings and made a part of these new rules.
- Any new construction rule must be substantiated and based upon factual findings and not perception.

The four types of geology commonly found in Idaho and a breakdown of suggested new construction practices:

1. **Unconsolidated formation (**Alluvial Sand and Gravel)
    - Wells should have a minimum 18 foot surface seal with a 2" annulus
    - Wells penetrating below confining layers should be sealed at the surface, and sealed at the contact of the confining layer preventing vertical movement of water.
    - The drive shoe plays a significant part in sealing and should be given consideration in borehole sealing methodology.
    - A temporary surface casing should be used to facilitate the installation of granular bentonite sealing material.

2. Consolidated formation (Shale, Granite Bedrock and Columbia River Basalt)
    - Wells should have a minimum 18 foot surface seal with a 2" annulus.
    - Casing driven through overburden should utilize a drive shoe or other means to create a seal in the bedrock contact zone.
    - The use of rubber formation seals or "shale traps" affixed to well liner with the combined use of 10 to 20 lbs. of 3/8 bentonite chips create an acceptable seal at or just below the drive shoe, or used to create a seal to isolate cascading water preferably referred to as an "incidental seal" throughout the borehole.
    - PVC liner should have a minimum thickness of class 200, does not need to be centralized or gravel packed, should not ever be dropped into the well for placement, vertical saw cut perforations of not more than 5" by 1/8" and no more than three perforations per foot are acceptable and not problematic. ***Should go into different section***

3. **Semi-consolidated Bedrock, weathered bedrock, Basalt Scoria and Cinders**
    - Wells should have a minimum 18 foot surface seal with a 2" annulus.
    - Steel liners must be used, no PVC liners
    - Casing driven through overburden should utilize a drive shoe or other means to create a seal in the bedrock contact zone.
    - The use of rubber formation seals or "shale traps" affixed to well liner with the combined use of 10 to 20 lbs. of 3/8 bentonite chips create an acceptable seal below the drive shoe, or create a seal to isolate cascading water referred to as an "incidental formation seal" throughout the borehole.
    - Inner-bedded formations of unconsolidated sediments must be cased with steel casing.

Special geologic conditions requiring specific construction methods and a special designation of "Area of Geologic Condition or A.G.C.:

- Geology that consists of caving or broken shale or granite that has demonstrated consistent problems in PVC liner installation should be required to use steel casing for liner.
- Geology that is comprised of sand and gravel with multiple aquifers of varying pressures and water quality should have special requirements for formation sealing such as multiple steel casings and seals.
- Columbia River Basalt formations that require penetration through multiple layers of basalt.
- Areas that have near surface water tables should have requirements for either pressure grouting or the use of coated pellets for surface seals or deeper seals.
- The method of designating an AGC should be done by requiring IDWR in rule, to demonstrate the need for such special considerations, and allow public opinion and the drilling community to play a significant part in any preliminary determinations for the area to be affected by such a designation before implementation.

Other considerations necessary during this negotiated rulemaking process.

- Considerations must be made to change the current 100 foot offset distances from septic drain-field systems by allowing deeper seals to prevent contamination and health issues i.e. a 100 foot vertical seal virtually adjacent to an existing or future septic drain-field.
- Enforcement must be made the same across the state. Standardized non-compliance issues must be met with like fines and NOV's. Autonomous enforcement policies by regional IDWR staff must be replaced with clear and consistent rules that are published and discernable by the drilling community.
- Well inspectors must be able to pass a Class 1 drillers test and be encouraged to attain the level of "Nationally Certified Well Inspector" and be required obtain continuing education credits or to keep their job.
- Well construction inspections must be modified to require IDWR to observe the construction habits of each licensed driller at least 2 times per year, and more often for drillers who demonstrate questionable performance and compliance issues. No more "after the fact" inspections that only verify GPS, well caps, a little bentonite at the surface, and tagging should be accepted.